

In the Claims

Claim 1 (currently amended): A final foamed product primarily of a PET matrix composition of recycled materials, said PET matrix composition consisting essentially of a micro cellular closed cell composite with discontinuous voids, said PET matrix composition comprising:

recycled polyethylene terephthalate (PET);

a branching agent; and

elastomeric material comprising recycled tires; and

said final foamed product is selected from the group consisting of: a docking post, telephone pole, beam, deck, boat slip, pier, stake, shovel, rake, ax handle, hammer, handles, shingle, baseball bat, and cricket bat.

Claim 2 (currently amended): A final foamed product in accordance with claim 1 wherein:

said PET comprises recycled plastic bottles comprising PET; and

said final foamed product comprises polyolefin selected from the group consisting of recycled milk jugs and recycled plastic toys.

Claim 3 (canceled)

Claim 4 (currently amended): A final foamed product in accordance with claim 13 wherein said elastomeric material further comprises ~~ethylene-propylene-diene monomer (EPDM)~~ at least one member selected from the group consisting of: ethylene-propylene-diene, recycled wiper blades, recycled vehicle seals, recycled refrigerator seals, and recycled door gaskets.

Claims 5-9 (canceled)

Claim 10 (currently amended): A final foamed product selected from the group consisting of a micro cellular closed cell composite with discontinuous voids, an open cell

composite with semi-continuous voids, and combinations thereof, said final foamed product having a composition, comprising by weight:

from about 5% to about 95% recycled polyethylene terephthalate (PET) with an inherent viscosity (I.V.) from about 0.4 to about 0.9, said recycled PET comprising recycled PET bottles; and

from about 5% to about 50% elastomeric-containing material selected from the group consisting of styrene-butadiene, polybutadiene, polyisoprene, and natural rubber, said elastomeric material comprising granulated or pulverized recycled tires; and

from about 0.05% to about 2% of a branching agent providing a chain extending agent selected from the group consisting of pyromellitic dianhydride, trimellitic anhydride, benzophenonetetracarboxylic acid dianhydride, sulfonyldiphthalic acid dianhydride, 2, 2-bis (2-oxazoline), and pentaerythritol.

Claim 11 (currently amended): A final foamed product having a composition in accordance with claim 10 comprising by weight:

from about 20% to about 80% recycled PET comprising said recycled PET bottles with an inherent viscosity from about 0.5 to about 0.8; and

from about 10% to about 45% elastomeric-containing material comprising said granulated or pulverized recycled tires with a density from about 0.9 to about 0.96 g/cc.

Claim 12 (currently amended): A final foamed product having a composition in accordance with claim 10 comprising:

from about 30% to about 60% recycled PET comprising said recycled PET bottles with an inherent viscosity from about 0.6 to about 0.7; and

from about 20% to about 40% elastomeric-containing material comprising said granulated or pulverized recycled tires.

Claim 13 (currently amended): A final foamed product in accordance with claim 10:

said final foamed product comprises a foamed railroad tie; and

said final foamed product ~~includes~~ at least one foaming agent selected from the group consisting of: carbon dioxide, nitrogen, argon, cyclopentane, and a fluorocarbon partially substituted with chlorine, bromine, or iodine.

Claim 14 (currently amended): A final foamed product in accordance with claim 10 comprising by weight:

~~from about 0% to about 25%~~ polyolefin selected from the group consisting of polyethylene and polypropylene;

a compatibilizing agent comprising at least one binder selected from the group consisting of ~~about 0% to about 6% Hytel-type binder comprising thermoplastic polyester elastomer of comprising polybutylene terephthalate (PBT) and polytetrahydrofuran glycol;~~ ~~from about 0% to about 3%~~ a maleated polyolefin binder selected from the group consisting of polyethylene and polypropylene; and ~~from about 0% to about 1%~~ a polyester elastomer binder comprising polybutadienediol (PDS);

~~from about 0.05% to about 2% of a branching agent providing a chain extending agent selected from the group consisting of pyromellitic dianhydride, trimellitic anhydride, benzophenonetetracarboxylic acid dianhydride, sulfonyldiphthalic acid dianhydride, 2, 2-bis (2-oxazoline), and pentaerythritol;~~

~~from about 0% to about 3%~~ a hydrolytic resistance agent selected from the group consisting of 2, 2'-bis (2-oxazoline), poly (1, 3, 5-triisopropylphenylene-2, 4-carbondiimide, N, N'-bis (2, 6-disopropylphenyl) carbodiimide, and 2, 6, 2', 6'-tetraisopropylidiphenyl carbodiimide; and

~~from about 0% to about 30%~~ filler comprising additives selected from the group consisting of talc, silica, colorant, glass fibers, carbon black, and calcium carbonate.

Claim 15 (currently amended): A final foamed product in accordance with claim 14 comprising by weight:

~~from about 0% to~~ less than about 15% polyolefin;

a compatibilizing agent comprising at least one binder selected from the group consisting of about 1% to about 5% ~~Hytel-type binder~~ thermoplastic polyester elastomer, from about 1% to about 2% maleated polyolefin binder, and from about 0.1% to about 0.8% polyester elastomer binder;

from about 0.2% to about 1% branching agent;

from about 0.2% to about 2% hydrolytic resistance agent; and

~~from about 0% to~~ less than about 25% filler.

Claim 16 (currently amended): A final foamed product in accordance with claim 14 comprising by weight:

~~from about 0% to~~ less than about 5% polyolefin;
a compatibilizing agent comprising at least one binder selected from the group
consisting of about 2% to about 4% ~~Hytel-type binder~~ thermoplastic polyester elastomer,
from about 0.5% to about 1.5% maleated polyolefin binder, and from about 0.3% to about
0.6% polyester elastomer binder;
from about 0.3% to about 0.6% branching agent;
from about 0.5% to about 1% hydrolytic resistance agent; and
~~from about 0% to~~ less than about 20% filler.

Claim 17 (currently amended): A final foamed product in accordance with claim 14 wherein said polyolefins comprise recycled products selected from the group consisting of: bottle-base cups, bottle caps, labels, milk jugs, garbage bags, scrap sheeting, plastic bottles, and plastic toys.

Claim 18 (canceled)

Claim 19 (currently amended): A final foamed product having a composition in accordance with claim 18 further comprises at least one member ~~further comprising ethylene-propylene diene monomer (EPDM)~~ selected from the group consisting of recycled vehicle wiper blades, recycled door gaskets, recycled vehicle seals, and recycled refrigerator seals.

Claim 20 (currently amended): A final foamed product in accordance with claim 10 wherein said final foam product is - selected from the group consisting of: a foamed railroad tie, foamed post, foamed beam, ~~strut, plank,~~ foamed pole, ~~deck support,~~ foamed deck, foamed boat slip, foamed pier, foamed stake, foamed shovel, foamed rake, foamed ax handle, foamed hammer, foamed handle, foamed shingle, foamed baseball bat, and foamed cricket bat.

Claim 21 (canceled)